

NASA SLR Network MCP PMT Upgrade

Howard Donovan

*Honeywell Technology Solutions, Inc., 7515 Mission Drive, Lanham, MD 20706, USA
Voice: 301-805-3938; Fax: 301-805-3974; Email: howard.donovan@honeywell-tsi.com*

Loyal Stewart, Jack Stevens, Mark Levy

Honeywell Technology Solutions, Inc., 7515 Mission Drive, Lanham, MD 20706, USA

ABSTRACT

Currently, the NASA SLR Network uses the International Telephone and Telegraph (ITT) F4129F Microchannel Plate (MCP) Photomultiplier Tube (PMT). Originally purchased between 1985 and 1989, the ITT MCP PMTs were installed throughout the NASA SLR network beginning in 1986. Replacing the Amperex XP2233B PMT, the ITT MCP PMT, coupled with the Tennelec 454 Constant Fraction Discriminator (CFD), greatly enhanced the resolution and accuracy of the NASA SLR Network. After 15 years, the original ITT MCP PMTs have long since lived their useful life. As the original PMTs failed, they were replaced with the spares. Now, these supplementary units are beginning to fail. Efforts to find a suitable replacement for the ITT MCP PMT were begun three years ago, with the first unit being delivered in June of 2002. While the initial purchase of the new MCP PMTs was in progress, investigative efforts continued in an effort to find other manufacturers that would meet the needs of the SLR Network. This poster paper will cover the laboratory verification, testing and calibration of the new MCP PMTs for the SLR Network as well as cover the field testing of a developmental MCP PMT from a separate manufacturer.